Umetco Minerals Corporation

PO BOX 578 4626 ROYAL AVENUE • NIAGARA FALLS NEW YORK 14302

March 25, 1986

Mr. Robert F. Kelly, Senior Radiologist
Occupational Safety & Health
State of New York - Department of Labor
65 Court Street
Buffalo, NY 14202

Subject: Termination of Radioactive Materials License 950-0139

Dear Mr Kelly:

On March 20, when you obtained soil samples to verify the cleanup of the property behind Building 166 on Elkem leased property, I informed you that we had discovered additional areas within the Niagara Plant that had above background radiation The purpose of this letter is to document our conversation and to make certain that we take the steps necessary for the termination of License No 950-0139

An environmental audit of the Niagara Plant was scheduled in conjunction with the leverage buy out of Umetco's vanadium and tungsten businesses In preparation for this, Al Gonas and I completed a gamma survey of the various buildings and grounds on the Niagara site. We found four areas with radiation significantly above background In addition, the radioactivity of a number of samples stored in quart sized cans was confirmed

The location of the radioactivity and the levels of radiation observed are shown in Table I

TABLE I

AREAS IN NIAGARA PLANT SIGNIFICANTLY ABOVE BACKGROUND

Date Surveyed	Location	Background	Maximum Reading	Times Background
2/12/86	Bldg. 29 (#6 Fce Rm)	5-10 µR/hr		
	- I-beam south of 30 Fce		200 µR/hr.	20
	- Trunion support north of 30 Fce.		420 µR/hr	42
2/18/86	Bldg. 24 (V-Al)	8-13 µR/hr.		
	- Area below dust collector		170 µR/hr	15
2/20/86	Yard East of #6 Fce Rm	8-12 µR/hr.		
	- 6' x 6' Areas near slag pile		200 µR/hr.	20
2/20/86	Yard East of #6 Fce. Rm			
	- 2' x 2' area near Bldg 191		210 µR/hr	20

The surveys were completed with a Ludlum Model 19 Micro R Meter calibrated on September 26, 1984. (Accuracy checked by comparison with an alpha, beta, gamma meter - Nuclear Chicago Model 2650 - March 21, 1986).

The dates the buildings of the Niagara Plant were surveyed and the background radiation observed are contained in Table II. More detailed information is contained in Laboratory Notebook 2446

TABLE II

RADIATION SURVEY OF NIAGARA PLANT
Ludlum Model 19 - Micro R Meter

Date	Buildings	Background	Comments
2/12/86	29, 30, 77 (Fce. Rm. #6)	5-10 µR/hr.	Area next to Fce 30 above background
2/14/86	25, 71, (UCAR, GLOBAR)	8-10 µR/hr	Some sample cans >1mR/hr.
	32 (#2 Packing)	8-10 µR/hr.	OK
2/14/86	89, 89A (#10 Packing)	8-10 µR/hr.	OK
2/18/86	24, 87 (Vanadium Aluminum)	8-13 µR/hr.	Area below Dust Coll. above background
2/20/86	(Storage Shed N.W. Corner of Umetco Property)	8-12 µR/hr.	OK
2/25/86	7 (Storeroom)	8-10 µR/hr.	OK
2/25/86	6 (Maintenance Office, Electrical & Carpenter Shops)	8-10 µR/hr.	OK
2/25/86	82, 82A (Machine Shop, Sheet Metal)	8-10 µR/hr.	OK
2/27/861	13, 14 (Aux Storeroom, Drum Shop, #8 Packing)	10-12 µR/hr.	OK
3/14/86	111 (Eng. Annex-Works Lab)	15-17 µR/hr.	OK
3/14/86	3 (Compressor Bldg.)	7-8 µR/hr.	OK

The plan for decontamination that I reviewed with you was as follows:

1. Remove and store the contaminated material in suitable containers.

2. Sample the areas, (either soil or surface wipes depending on which applies) and submit them to a qualified laboratory to identify the sources of the radiation and to confirm the radioactivity has been lowered to acceptable levels.

3. Transport the contaminated material together with the radioactive samples from Building 25 to an approved burial site under the supervision of a qualified broker.

4. Provide the Department of Labor with the analytical results and documentation that the material has been removed from the site and has been accepted for burial.

5. Make arrangements for the Department of Labor to obtain samples to verify that the decontamination was satisfactory.

At the time of your visit we had begun to cleanup the area in the vicinity of Furnace No. 30 (contaminated slag and soil were being placed into 55-gallon drums). This has been completed and we are now working on cleaning up the area in Building 24.

I would like to draw to your attention that the last amendment to License 950-0139 that I have on record is listed as No. 9, dated March 1979, expiration date November 1981. However, I have a copy of a letter dated November 17, 1984 which requests transfer of License 950-0139 from Union Carbide to Umetco Minerals addressed to Mr. George Kasyk of the New York Department of Labor. I expect that with our continuing efforts to terminate the license, issuance of the amendments is not a high priority

If you need more information please contact me. If I do not hear from you I will proceed according to the plan outlined above.

Very truly yours,

D. J. Hansen

mau/349h

cc: Messrs:
H. K. Jackson
F. V. McMillen
R. L. Miller
D. G. Millenbruch
R. C. Smith
R. G. Tisch
C. T Wentzel

APPENDIX ONE

EXCERPTS FROM INDUSTRIAL CODE RULE 38, STATE OF NEW YORK, DEPARTMENT OF LABOR

[38 11]

38 11 Duration of licenses Except as below provided, a license shall expire at the end of the expiration date therein stated The filing of an application by the licensee more than 30 days prior to the expiration date for a renewal or a new and superseding license shall extend the license until the commissioner has finally acted on the application If a licensee fails to renew his license, he must immediately cease all use of radioactive materials, transfer all radioactive material to authorized recipient(s) and comply with the requirements of Section 38 29 of this Part (rule) To terminate a license, licensee must notify commissioner, transfer all radioactive materials to authorized recipient(s) and comply with the provisions of Section 38 29 of this Part (rule)

38 12 Renewal of licenses An application for a renewal of a license shall be made on a form prescribed by the commissioner Renewal of a license may be denied on any of the grounds specified in this Part (rule) for the issuance of licenses or for the suspension or revocation of licenses Notwithstanding the renewal of a license, the commissioner may suspend or revoke a license for cause or violations occurring during the license period immediately preceding the issuance of the renewal

38 13 Amendment of licenses A corrective amendment of a license may be made by the commissioner at any time upon his initiative or at the request of the licensee Upon the licensec's written request the commissioner may amend a license in any respect consistent with this Part (rule) Every license may be amended by the commissioner upon any ground for which he might deny, suspend or revoke such license

38 14 Suspension or revocation The Commissioner may revoke or suspend any license, or approval, in whole or in part, for

(a) Any material misstatement in the qpplication therefor or in any supplementary statement thereto,

(b) Any condition revealed by such application, supplementary statement, report, record, inspection or other means which would warrant the commissioner to refuse to grant a license or approval on an original application, or

(c) Any violation or failure to observe any of the applicable terms or provisions of a license, an approval, the Labor Law, this Part (rule) or any other applicable law, rule, regulation, code or order

38 15 Additional requirements. Notwithstanding any exemption set forth in this Part (rule), the commissioner may by order, as part of a license or otherwise, make such specific requirements, in addition to those set forth in this Part (rule), as may be reasonably appropriate

timers shall be maintained in good repair and proper operating condition and shall be checked at least every six months or at such intervals as may be required by the commissioner

38 27 Enclosed controlled areas Any enclosed controlled area with any access opening large enough for the passage of any person shall have such opening provided with an exit door which can be opened manually from the inside or by such other means approved by the commissioner

38 28 Eating, drinking or smoking No person shall permit eating, drinking or smoking in any airborne radioactivity area or in any controlled area with surface contamination above the limits specified in Table 5 of this Part (rule)

38.29 Vacating installations and property (a) *Installations* Each licensee before vacating any installation, or transferring the premises containing such installation, shall permanently decontaminate such installation and premises below or equal to the limits specified in Table 5 of this Part (rule) A survey shall be made after such decontamination and the commissioner and landlord or subsequent tenant or transferee shall be provided with a copy of such survey No such installation or premises shall be vacated, sold or transferred until the decontamination survey has been verified and accepted by the commissioner

(b) *Property* No machinery, instruments, laboratory equipment or any other property used in contact with or in close proximity to radioactive material in a licensed installation shall be assigned, sold, leased or transferred to an unlicensed person unless such property has been permanently decontaminated below or equal to the limits specified in Table 5 of this Part (rule) A survey shall be made after such decontamination and the commissioner and subsequent transferee or owner shall be provided with a copy of such survey No such property shall be assigned, sold, leased or transferred until such decontamination survey has been verified and accepted by the commissioner

38 30 Personnel monitoring equipment Every person who possesses a radiation source shall apply appropriate calibrated and operable personnel monitoring equipment to, and in case of film badge and thermoluminescent dosimeters which are processed by a laboratory or firm which is currently accredited by the United States National Bureau Standards under their National Voluntary Laboratory Accreditation Program, and shall require the use of such equipment by, each individual whom such person suffers or permits to enter

TABLE 5
LIMITS FOR UNCONTROLLED AREAS

(a) Surface contamination limits		
(1) Alpha emitters		
(i) Removable	$\frac{15\ pCi}{100\ cm^2} = \frac{33\ dpm}{100\ cm^2}$	average over any one surface
	$\frac{45\ pCi}{100\ cm^2} = \frac{100\ dpm}{100\ cm^2}$	maximum
(ii) Total (fixed)	$\frac{450\ pCi}{100\ cm^2} = \frac{1000\ dpm}{100\ cm^2}$	average over any one surface
	$\frac{2250\ pCi}{100\ cm^2} = \frac{5000\ dpm}{100\ cm^2}$	maximum
	$\frac{0\ 25\ mrem\ at\ 1\ cm}{hr}$	
(2) Beta-Gamma emitters		
(i) Removable (all beta-gamma emitters except Hydrogen 3)	$\frac{100\ pCi}{100\ cm^2}$	average over any one surface
	$\frac{500\ pCi}{100\ cm^2}$	maximum
Removable (Hydrogen 3)	$\frac{1000\ pCi}{100\ cm^2}$	average over any one surface
	$\frac{5000\ pCi}{100\ cm^2}$	maximum
(ii) Total (fixed)	0 2[illegible] [illegible] surface	

(b) Concentrations in air and water Table 6, Schedule II

(c) Concentrations in soil and other materials except water

(1) Radioactive material except source material Table 2, Column 2

(2) Source material 0 05 per cent by weight

Note Jurisdictional limits The limits listed in Table 5 of this Part (rule) shall apply to those installations and property that remain subject to the jurisdiction of the Labor Law and this Part (rule)

TABLE 2
EXEMPT CONCENTRATIONS

Element (atomic number)	*Isotope*	*Column 1 Gas concentration μCi/ml**	*Column 2 Liquid and solid concentration μCi/ml***
Antimony (51)	Sb 122		3×10^{-4}
	Sb 124		2×10^{-4}
	Sb 125		1×10^{-3}
Argon (18)	A 37	1×10^{-3}	
	A 41	4×10^{-7}	
Arsenic (33)	As 73		5×10^{-3}
	As 74		5×10^{-4}
	As 76		2×10^{-4}
	As 77		8×10^{-4}
Barium (56)	Ba 131		2×10^{-3}
	Ba 140		3×10^{-4}
Beryllium (4)	Be 7		2×10^{-2}
Bismuth (83)	Bi 206		4×10^{-4}
Bromine (35)	Br 82	4×10^{-7}	3×10^{-3}
Cadmium (48)	Cd 109		2×10^{-3}
	Cd 115m		3×10^{-4}
	Cd 115		3×10^{-4}
Calcium (20)	Ca 45		9×10^{-5}
	Ca 47		5×10^{-4}
Carbon (6)	C 14	1×10^{-6}	8×10^{-3}
Cerium (58)	Ce 141		9×10^{-4}
	Ce 143		4×10^{-4}
	Ce 144		1×10^{-4}
Cesium (55)	Cs 131		2×10^{-2}
	Cs 134m		6×10^{-2}
	Cs 134		9×10^{-5}
	Cs 137		2×10^{-4}
Chlorine (17)	Cl 38	9×10^{-7}	4×10^{-3}
Chromium (24)	Cr 51		2×10^{-2}
Cobalt (27)	Co 57		5×10^{-3}
	Co 58		1×10^{-3}
	Co 60		5×10^{-4}
Copper (29)	Cu 64		3×10^{-3}
Dysprosium (66)	Dy 165		4×10^{-3}
	Dy 166		4×10^{-4}
Erbium (68)	Er 169		9×10^{-4}
	Er 171		1×10^{-3}

See notes at end of table

TABLE 2—(Continued)
EXEMPT CONCENTRATIONS

Element (atomic number)	*Isotope*	*Column 1 Gas concentration μCi/ml**	*Column 2 Liquid and solid concentration μCi/ml***
Europium (63)	Eu 152 (T ½ = 9.2 Hrs)		6×10^{-4}
	Eu 155		2×10^{-3}
Fluorine (9)	F 18	2×10^{-6}	8×10^{-3}
Gadolinium (64)	Gd 153		2×10^{-3}
	Gd 159		8×10^{-4}
Gallium (31)	Ga 72		4×10^{-4}
Germanium (32)	Ge 71		2×10^{-2}
Gold (79)	Au 196		2×10^{-3}
	Au 198		5×10^{-4}
	Au 199		2×10^{-3}
Hafnium (72)	Hf 181		7×10^{-4}
Hydrogen (1)	H 3	5×10^{-6}	3×10^{-2}
Indium (49)	In 113m		1×10^{-2}
	In 114m		2×10^{-4}
Iodine (53)	I 126	3×10^{-9}	2×10^{-5}
	I 131	3×10^{-9}	2×10^{-5}
	I 132	8×10^{-8}	6×10^{-4}
	I 133	1×10^{-8}	7×10^{-5}
	I 134	2×10^{-7}	1×10^{-3}
Iridium (77)	Ir 190		2×10^{-3}
	Ir 192		4×10^{-4}
	Ir 194		3×10^{-4}
Iron (26)	Fe 55		8×10^{-3}
	Fe 59		6×10^{-4}
Krypton (36)	Kr 85m	1×10^{-6}	
	Kr 85	3×10^{-6}	
Lanthanum (57)	La 140		2×10^{-4}
Lead (82)	Pb 203		4×10^{-3}
Lutetium (71)	Lu 177		1×10^{-3}
Manganese (25)	Mn 52		3×10^{-4}
	Mn 54		1×10^{-3}
	Mn 56		1×10^{-3}
Mercury (80)	Hg 197m		2×10^{-3}
	Hg 197		3×10^{-3}
	Hg 203		2×10^{-4}

See notes at end of table

TABLE 2—(Continued)
EXEMPT CONCENTRATIONS

Element (atomic number)	*Isotope*	*Column 1 Gas concentration μCi/ml**	*Column 2 Liquid and solid concentration μCi/ml***
Molybdenum (42)	Mo 99		2×10^{-3}
Neodymium (60)	Nd 147		6×10^{-4}
	Nd 149		3×10^{-3}
Nickel (28)	Ni 65		1×10^{-3}
Niobium (Columbium)(41)	Nb 95		1×10^{-3}
	Nb 97		9×10^{-3}
Osmium (76)	Os 185		7×10^{-4}
	Os 191m		3×10^{-2}
	Os 191		2×10^{-3}
	Os 193		6×10^{-4}
Palladium (46)	Pd 103		3×10^{-3}
	Pd 109		9×10^{-4}
Phosphorus (32)	P 32		2×10^{-4}
Platinum (78)	Pt 191		1×10^{-3}
	Pt 193m		1×10^{-2}
	Pt 197m		1×10^{-2}
	Pt 197		1×10^{-3}
Polonium (84)	Po 210	2×10^{-10}	7×10^{-6}
Potassium (19)	K 42		3×10^{-3}
Praseodymium (59)	Pr 142		3×10^{-4}
	Pr 143		5×10^{-4}
Promethium (61)	Pm 147		2×10^{-3}
	Pm 149		4×10^{-4}
Radium (88)	Ra 226	1×10^{-11}	1×10^{-7}
	Ra 228	2×10^{-11}	3×10^{-7}
Rhenium (75)	Re 183		6×10^{-3}
	Re 186		9×10^{-4}
	Re 188		6×10^{-4}
Rhodium (45)	Rh 103m		1×10^{-1}
	Rh 105		1×10^{-3}
Rubidium (37)	Rb 86		7×10^{-4}
Ruthenium (44)	Ru 97		4×10^{-3}
	Ru 103		8×10^{-4}
	Ru 105		1×10^{-3}
	Ru 106		1×10^{-4}
Samarium (62)	Sm 153		8×10^{-4}

See notes at end of table

TABLE 2—(Continued)
EXEMPT CONCENTRATIONS

Element (atomic number)	*Isotope*	*Column 1 Gas concentration μCi/ml**	*Column 2 Liquid and solid concentration μCi/ml***
Scandium (21)	Sc 46		4×10^{-4}
	Sc 47		9×10^{-4}
	Sc 48		3×10^{-4}
Selenium (34)	Se 75		3×10^{-3}
Silicon (14)	Si 31		9×10^{-3}
Silver (47)	Ag 105		1×10^{-3}
	Ag 110m		3×10^{-4}
	Ag 111		4×10^{-4}
Sodium (11)	Na 24		2×10^{-3}
Strontium (38)	Sr 85		1×10^{-3}
	Sr 89		1×10^{-4}
	Sr 91		7×10^{-4}
	Sr 92		7×10^{-4}
Sulfur (16)	S 35	9×10^{-8}	6×10^{-4}
Tantalum (73)	Ta 182		4×10^{-4}
Technetium (43)	Tc 96m		1×10^{-1}
	Tc 96		1×10^{-3}
Tellurium (52)	Te 125m		2×10^{-3}
	Te 127m		6×10^{-4}
	Te 127		3×10^{-3}
	Te 129m		3×10^{-4}
	Te 131m		6×10^{-4}
	Te 132		3×10^{-4}
Terbium (65)	Tb 160		4×10^{-4}
Thallium (81)	Tl 200		4×10^{-3}
	Tl 201		3×10^{-3}
	Tl 202		1×10^{-3}
	Tl 204		1×10^{-3}
Thulium (69)	Tm 170		5×10^{-4}
	Tm 171		5×10^{-3}
Tin (50)	Sn 113		9×10^{-4}
	Sn 125		2×10^{-4}
Tungsten (Wolfram) (74)	W 181		4×10^{-3}
	W 187		7×10^{-4}
Vanadium (23)	V 48		3×10^{-4}
Xenon (54)	Xe 131m	4×10^{-6}	
	Xe 133	3×10^{-6}	
	Xe 135	1×10^{-6}	

See notes at end of table

TABLE 2—(Continued)
EXEMPT CONCENTRATIONS

Element (atomic number)	*Isotope*	*Column 1 Gas concentration μCi/ml**	*Column 2 Liquid and solid concentration μCi/ml***
Ytterbium (70)	Yb 175		1×10^{-3}
Yttrium (39)	Y 90		2×10^{-4}
	Y 91m		3×10^{-2}
	Y 91		3×10^{-4}
	Y 92		6×10^{-4}
	Y 93		3×10^{-4}
Zinc (30)	Zn 65		1×10^{-3}
	Zn 69m		7×10^{-4}
	Zn 69		2×10^{-2}
Zirconium (40)	Zr 95		6×10^{-4}
	Ar 97		2×10^{-4}
Alpha-emitting radioactive material other than special nuclear and transuranic material not listed above		1×10^{-12}	1×10^{-8}
Beta and/or gamma-emitting radioactive material not listed above with half-life less than 3 years		1×10^{-10}	1×10^{-6}

NOTES

* Values are given for those materials normally used as gases

** μc/gm for solids

Note 1 Many radionuclides disintegrate into daughter products which are also radioactive In expressing the concentrations in Table 2, the activity stated is that of the parent radionuclide and takes into account the daughter products

Note 2 For the purposes of section 38 41, Table 1, Exemption 2 of this Part (rule) where there is present a combination of radionuclides, the limit for the combination shall be derived as follows

(a) Determine for each radionuclide present the following quotient Set the numerator equal to the concentration of the radionuclide present and the denominator equal to the exempt concentration listed in Table 2 The sum of such quotients shall not exceed "one"

Example

$$\frac{\text{Concentration of Radionuclide A present}}{\text{Exempt concentration of Radionuclide A}} + \frac{\text{Concentration of Radionuclide B present}}{\text{Exempt concentration of Radionuclide B}} + \leq 1$$

Umetco Minerals Corporation

INTERNAL CORRESPONDENCE

OLD RIDGEBURY ROAD • DANBURY, CONNECTICUT 06817

To [Name] Mr. C.T. Wentzel

Date April 30, 1986

Division

Originating Dept

Location

Area

Area

Answering Letter Date

Subject

Copy to H.M. Wilber
J. Frost
F.V. McMillen

Dear Craig:

Herb has probably filled you in on our meeting at Niagara on the 22nd, particularly regarding our discussions on asbestos removal. After examining the various jobs to be performed, the package is getting rather large and Herb indicated we could likely get better quotes by combining the work.

Would you please arrange to get two or three quotes on removal and disposal of the following asbestos items:

a) Globar Elevator Lining
b) Building 111 heating boiler and associated piping for distribution system
c) All asbestos in Niacet boiler buildings (Bldg 4)
d) Asbestos on steam pipes leaving Building 4 and proceeding towards Umetco property, ie., 3-400 feet of pipe rack holding 4-5 pipes.

Craig, would you also get a quote for removal of the boilers themselves from building 4, associated pumps and equipment, two stack from the roof and removal of the sheet metal wing on the south side. Hopefully there would be some salvage value from the piping, steel and fire bricks etc. to alleviate some of the removal costs. I doubt if you could combine this job with the asbestos removal but you could inquire.

Please let me know when you have the quote so we can find how to proceed. Thanks very much.

Very truly yours,

D.G. Millenbruch

DGM/cw